

## Classification of the Trypetinae (Diptera: Tephritidae), with a discussion of the Afrotropical fauna

by

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The subfamily Trypetinae is considered to comprise the tribes Trypetini, Zaceratini nov., Rivelliomimini nov., Acanthonevrini, Euphrantini, Adramini and Phytalmiini. *Anastrepha* Schiner is removed from this subfamily to the tribe Anastrephini nov. and is associated with *Toxotrypana* Gerstacker in the Neotropical subfamily Toxotrypaninae. *Ichneumonopsis* Hardy is removed from the Adramini to the tribe Ichneumonopsidini nov. and is placed in the subfamily Dacinae. *Ischyropteron* Bigot is also excluded from the subfamily; its affinities are uncertain.

The Afrotropical fauna is discussed and all seven tribes recorded from the Region. *Notommoides* **gen. nov.**, with type-species *N. pallidisetula* **sp. nov.**, and *Celidodacus zambeziensis* **sp. nov.** are described and illustrated from Moambique and Zimbabwe respectively. Several new synonymies are proposed, and a key to the Afrotropical genera of Trypetinae is provided.

### INTRODUCTION

It is widely recognized by workers on the Tephritidae that the higher classification of the family is in a somewhat chaotic state. This is especially true of the subfamily Trypetinae. Modern classifications are based on that of Hering (1947), who included within the Trypetinae the tribes Euphrantini, Acanthonevrini, Ceratitini, Gastrozonini and Trypetini. Hardy (1977) included the tribes Acanthonevrini, Aciurini, Adramini, Ceratitini, Euphrantini, Euribiini (= Myopitini), Gastrozonini, Oedaspini, Terelliini and Trypetini. The Aciurini, Myopitini, Oedaspini and Terelliini had been regarded as separate subfamilies, and the Adramini included in the Dacinae, by Hering (1947). For the Neotropical fauna, Foote (1980) also excluded the Myopitini, Oedaspini, Aciurini and Terelliini from the Trypetinae. Cogan and Munro (1980) regarded Myopitinae (as Urophorinae), Adraminae, Euphrantinae, Trypetinae, Ceratitinae, Acanthonevrinae and Aciurinae as separate subfamilies, including the Oedaspini within the Aciurinae.

Several of these groups appear not to belong to the Trypetinae and three genera normally included, *Anastrepha* Schiner, *Ischyropteron* Bigot and *Ichneumonopsis* Hardy, may also be excluded. These are discussed below, followed by a reappraisal of the subfamily and its tribes, of which two are proposed as new. The Afrotropical genera and species are also discussed, with particular reference to their tribal placements.

## EXCLUDED GROUPS

## Myopitini, Aciurini, Oedaspini and Terelliini

The larvae of members of these four groups attack the flower-heads or form galls on Compositae, Labiatae, Verbenaceae or Acanthaceae and as such form a biological group allied to typical Tephritinae. The Oedaspini lack scapular bristles and a distinct mesopleural suture and may be associated with the Platensini, Ditrichini, Tephrellini, Schistopterini and Tephritini in the subfamily Tephritinae. The Aciurini also lack scapular bristles and the mesopleural suture is weak. This appears to represent a subfamily allied to the Tephritinae. The Myopitini possess both scapular bristles (although the outer pair are generally weak) and a distinct mesopleural suture but otherwise this appears to represent a distinct subfamily allied to the Aciurinae and Tephritinae. The Terelliini may also belong to a separate subfamily lying between the Myopitinae and Aciurinae; scapular bristles are lacking but a well developed mesopleural suture is present, at least in *Graspedoxantha Bezzi*.

A further feature of these four groups is the presence in the female of only two spermathecae and a long, pointed aculeus. These characters are shared with the Dacinae and Ceratitinae. Most Trypetinae have three spermathecae and the aculeus undergoes various modifications.

## Ceratitini and Gastrozonini

Usually included within the Trypetinae, these two groups appear to represent a separate subfamily, Ceratitinae, closer to the Dacinae than to true Trypetinae, as noted by Kitto (1983). The presence of two spermathecae, long pointed aculeus, often swollen scutellum, position of the dorsocentral bristles (close to the anterior supracoxals), and shape of the anal cell extension serve to separate the Ceratitinae from the Trypetinae. The anal cell extension is relatively well developed and the anal cross-vein (vein CuA<sub>2</sub>) tends to be somewhat sinuous, with the widest part of the extension towards the apex; in the Trypetinae the cross-vein is straighter, with the widest part of the extension at the base. The anal cell extension in the Dacinae is similar to, but generally longer than, that of the Ceratitinae.

Hardy (1980) suggested that the Gastrozonini were merely Acanthonevrini with four scutellar bristles and indeed some genera included in this tribe are better placed in the Acanthonevrini (e.g. those with three spermathecae and subapical setae on the aculeus). However, those genera which have only two spermathecae, a non-setose aculeus and breed in bamboo shoots (true Gastrozonini) appear to belong with the Ceratitinae. Since the Ceratitinae appear to be allied to the Dacinae, Myopitinae, Aciurinae and Tephritinae (especially in characters such as the spermathecae, aculeus and position of the dorsocentral bristles), their inclusion within the Trypetinae would result in a classification that is almost certainly polyphyletic.

*Anastrepha* Schiner

Traditionally included in the Trypetinae, immunological studies by Kitto (1983) have shown this genus to be very closely allied to *Toxotrypana* Gerstäcker, a genus normally included in the Dacinae. This immunological data is supported by morphology, since both genera have a similar thoracic shape and pattern, upwardly curved tip of vein M<sub>1+2</sub>, elongate anal cell extension, long and apically pointed aculeus

and three spermathecae. Munro (1985) noted that *Toxotrypana* did not belong to the Dacinae and the presence of three spermathecae confirms this. The presence of three spermathecae also excludes *Anastrepha* from the Ceratitinae and the long, pointed aculeus sets it apart from other Trypetinae. Kitto (1983) also showed that, immunologically, *Anastrepha* is distinct from other Trypetinae (such as *Rhagoletis* Loew) and also from Dacinae, Ceratitinae, etc.

It is apparent that *Anastrepha* and *Toxotrypana* are closely allied to each other but distinct from all other subfamilies of the Tephritidae. They are referred here to the Neotropical subfamily Toxotrypaninae, that name first being used as a tribe by Munro (1985). However, *Anastrepha* differs from *Toxotrypana* in characters such as the presence of most of the thoracic and head bristles normal for the family, a row of ventral bristles on the fore femora, a short abdomen and a straight ovicape. Accordingly, *Anastrepha* is regarded here as the type-genus of the new tribe Anastrephini.

It is interesting to note that, whereas this subfamily is of Neotropical origin, all the remaining subfamilies of Tephritidae appear to have evolved in the Old World, with some groups (e.g. Trypetini, Myopitinae, Tephritinae) secondarily invading the Americas.

#### *Ischyropteron* Bigot

This Neotropical genus was tentatively referred to the Adramini by Foote (1979) but diagnostic characters of that tribe appear to be absent (e.g. pleurotergal hairs, femoral spines) and the affinities of the sole species *I. nigricaudatum* Bigot are obscure. It was referred arbitrarily to the Trypetini by Foote (1980) but the bare fore femora, long slender legs, wing pattern, narrow abdomen, two scutellar bristles and apparently long and narrow ovipositor (see figure of ovicape in Foote 1979) suggest that it does not belong to that tribe. The lack of pleurotergal hairs and other characters exclude it from the Euphrantini and the shape of the anal cell and various other characters rule out a relationship with Phytalmiini, Zaceratini or Rivellimimini. Its various characters also serve to exclude it from the Acanthonevrini. Unfortunately, the holotype (and only known specimen) is headless.

The subcostal vein is sharply upturned but appears to be much better developed than is normal in Tephritidae. It is possible that *Ischyropteron* belongs to the sister-group of the Tephritidae. Since the family appears to have originated in Gondwanaland (the Toxotrypaninae appears to be primitive), the presence of such a sister-group in South America would not be unexpected.

Pending clarification of the affinities of this genus, known only from southern Brazil, it is best excluded from the Trypetinae. Certainly, it cannot satisfactorily be referred to any of the tribes recognized here. If it does prove to belong to the Tephritidae, a separate subfamily will probably be needed to accommodate it.

#### *Ichneumonopsis* Hardy

This Oriental genus was referred to the Adramini by Hardy (1973) but it differs from typical members of that tribe in the absence of long hairs on the pleuroterga, a narrow anal cell extension and only two spermathecae in the female. The anal cell extension and two spermathecae also separate this genus from the Phytalmiini. These characters, together with the wing pattern and general reduction of head bristles (inferior orbitals, ocellars, postocellars, postverticals and occipitals are absent) suggest a

relationship with the Dacinae, to which it is referred here. However, *Ichneumonopsis* differs from other Dacinae (*sensu* Hardy 1973, 1974) in the narrower second basal cell, normal positioning of the radial veins, short r-m cross-vein, plumose arista, two lateral scutellar bristles and rounded spermathecae. It resembles *Monacrostichus* Bezzi (referred to the tribe Monacrostichini by Munro (1985)) in the spining of the fore femora and in having tergite VI of the female not disassociated from tergite V, but differs in a number of characters as listed above. Accordingly, *Ichneumonopsis* is regarded here as the type-genus of the new tribe Ichneumonopsidini. It appears to be the most primitive genus of the subfamily and is known only from Burma. The raising of the tribe Dacini to family level by Munro (1985) is not accepted here, since the whole subfamily appears to be an integral part of the Tephritidae.

### CLASSIFICATION OF THE TRYPETINAE

The subfamily Trypetinae may be diagnosed as follows: Body often entirely dark or with dark markings, generally shiny, with fine pubescence. Head with ocellar bristles present or absent; occipital bristles thin and dark (pale if other bristles are pale); third antennal segment rounded apically; arista bare, pubescent or plumose. Thorax often with distinct yellow or white vittae on mesopleura, rarely on mesonotum; pleuroterga bare or with fine, erect hairs; metathorax with postcoxal bridge broadly sclerotized or partly membranous; mesopleural suture distinct; bristles normal or reduced, rarely all absent; when present dorsocentral bristles generally well behind line of anterior supra-alar bristles, rarely on or before this line; scapular bristles typically present, at least outer pair; two to ten scutellar bristles, rarely none, typically four. Legs with a row of bristles on fore femora present or absent. Wing often with a weak costal bristle at base of stigma, rarely well developed, often absent; no costal nick at base of stigma; vein  $M_{1+2}$  meeting costa at a distinct angle; anal cell extension relatively long and narrow, short and broad, reduced to an angle or absent, but broadest basally when present. Abdomen short or elongate. Female typically with three spermathecae, two in a few species and genera, and a variously shaped aculeus; tergite VI of variable length but not longer than tergite V, rarely vestigial.

This is a varied subfamily, divisible into seven tribes. The limits of some of these tribes are not clearly definable and none appear to be recognizable as distinct subfamilies. Any species with three spermathecae that does not belong to the Toxotrypaninae may be placed here. Several species of *Rhagoletis* Loew, *Acidiella* Hendel, *Chenacidiella* Shiraki, *Myoleja* Rondani, *Callistomyia* Bezzi, *Taomyia* Bezzi and possibly other genera have only two spermathecae but are otherwise referable to this subfamily on characters such as the position of the dorsocentral bristles, shape of the anal cell extension and wing pattern. Other genera with two spermathecae, and with the anal cell extension narrower basally than medially (i.e. with the anal cross-vein sinuous), normally included in the Trypetinae, may be referred to the Ceratitinae (e.g. *Acidoxantha* Hendel).

This subfamily reaches its maximum development in Southeast Asia and Africa but the tribe Trypetini is widespread in the Palaearctic and extends to the Americas. Larval hosts are varied. Fruit, buds, pods, stems and twigs are used and some genera are leaf miners, whilst a few have been recorded from the bark of newly-felled trees and one is a parasite-inquiline in leaf galls occupied by sawfly larvae.

The tribal classification adopted here, and the suggested relationships of the tribes, are shown in Figure 1. The subfamily is a diverse one and there are few obvious

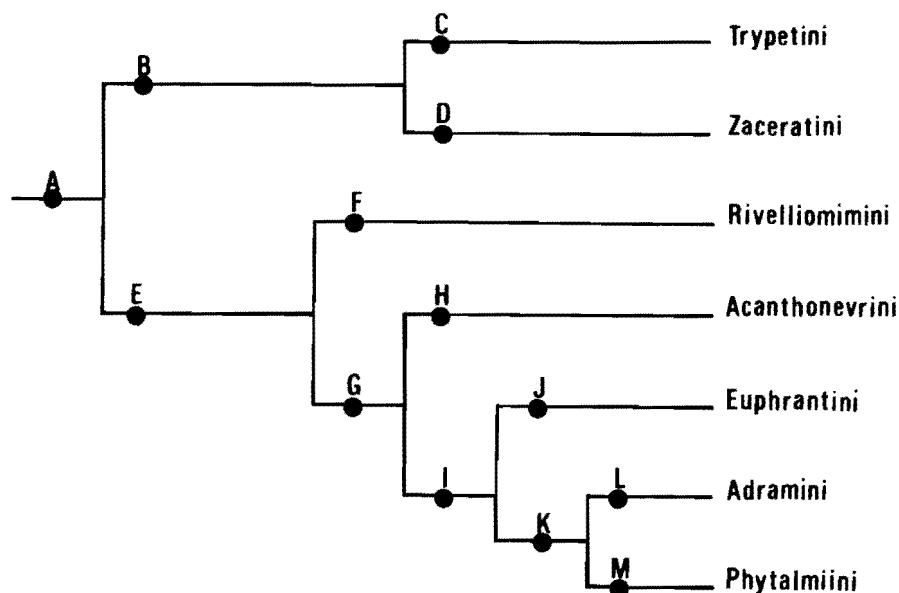


Fig. 1. Suggested relationship of the tribes of Trypetinae. (See text for explanation of character sets A to M).

characters of use in higher classification. Character convergences and exceptions appear to exist amongst otherwise unrelated or related groups. Character trends therefore need to be applied if a workable classification is to be achieved, accepting that various anomalies may occur. The following characters appear to be of value at tribal level: membranous or sclerotized metathoracic postcoxal bridge, presence or absence of long hairs on the pleuroterga, shape of the anal cell, shape of the aculeus, well developed or vestigial tergite VI in the female. Supporting characters include bristle reduction, abdomen shape, shape of antennal segments II and III, shape of discal cell and shape of stigma. With the possible exception of the aedeagal apodeme, there appears to be no male genitalia characters of any use at the tribal level.

The character sets used to delimit the branches in Figure 1 are detailed below. It should be noted that a full phylogenetic analysis is not possible at the present time and must await a detailed study of all the species placed in the subfamily. Consequently, the arrangement presented here is somewhat provisional, although the relationships of the Euphrantini, Adramini and Phytalimiini appear fairly clear.

**Character set A:** The following are presumed to be primitive for the subfamily, based on outgroup comparison with other subfamilies in the Tephritidae. Metathoracic postcoxal bridge partly membranous; pleuroterga bare; anal cell with an apical extension; aculeus narrow and apically pointed, without setae; bristles complete; abdomen short; tergite VI of female well developed; three spermathecae.

*Character set B:* Ocellar bristles generally present; body often black; aculeus short and without setae at tip, generally broad, rarely laterally compressed, smooth or serrate.

*Character set C:* Tribe Trypetini. Anal cell with an apical extension; aculeus often serrate, rarely laterally compressed; segments II and III of antennae not elongate; discal cell not greatly narrowed at base; stigma not vestigial; a short but distinct costal bristle usually present at base of stigma; body without a grey reticulate pattern; female sometimes with two spermathecae.

*Character set D:* Tribe Zaceratini **nov.** Anal cell outwardly rounded, without an extension; aculeus smooth; segments II and III of antennae elongate; discal cell greatly narrowed at base, broad distally; stigma vestigial; no distinct costal bristle at base of stigma; body with a grey reticulate pattern.

*Character set E:* Ocellar bristles generally rudimentary or absent, rarely distinct; body generally red-brown to fulvous, often with dark dorsolateral lines on mesonotum; aculeus often with setae at tip, generally narrow, smooth or with minute serrations.

*Character set F:* Tribe Rivelliomimini **nov.** Anal cell apically acute but without an extension, the cross-vein straight and inwardly oblique; abdomen rounded, with black bullae on tergite V; tergite VI of female vestigial, not visible from above; dorsocentral bristles placed close to line of anterior supra-alars; aculeus narrow, without subapical setae.

*Character set G:* Anal cell blunt or with an apical extension; abdomen oval or elongate, without black bullae on tergite V; tergite VI of female not vestigial; dorsocentral bristles generally well behind line of anterior supra-alars, close to prescutellars; aculeus often with subapical setae.

*Character set H:* Tribe Acanthonevrini. Abdomen oval; pleuroterga bare; anal cell generally with an apical extension; aculeus with subapical setae.

*Character set I:* Abdomen elongate; pleuroterga often with long hairs, if these are absent then anal cell apically blunt; aculeus often without subapical setae.

*Character set J:* Tribe Euphrantini. Metathoracic postcoxal bridge partly membranous, not broadly sclerotized; bristle reduction slight to moderate.

*Character set K:* Metathoracic postcoxal bridge broadly sclerotized; bristle reduction great.

*Character set L:* Tribe Adramini. Pleuroterga with long hairs; anal cell with an apical extension; wing bases not narrowed; femoral spines well developed.

*Character set M:* Tribe Phytalmiini. Pleuroterga bare; anal cell apically blunt, without an extension; wing bases narrowed; femoral spines weak or absent. The loss of the pleurotergal hairs is presumably secondary, since this tribe otherwise appears to be closely allied to the Adramini.

## KEY TO TRIBES OF TRYPETINAE

- 1 Metathoracic postcoxal bridge broadly sclerotized ..... 2
- Metathoracic postcoxal bridge partly membranous ..... 3
- 2 Pleuroterga with long hairs; anal cell outwardly acuminate ..... Adramini
- Pleuroterga without long hairs; anal cell outwardly blunt ..... Phytalmiini
- 3 Antennae much longer than face; stigma vestigial; discal cell narrowed at base; anal cell outwardly rounded; body with a grey reticulae pattern ..... Zaceratini
- Antennae not much longer than face; stigma well developed; discal cell not narrowed at base; anal cell normally outwardly acuminate or acute; body without a grey reticulate pattern ..... 4
- 4 Abdomen with black bullae on tergite V; tergite VI of female vestigial; anal cell acute but not produced at lower angle, the anal cross-vein straight; second antennal segment not modified ..... Rivelliomimini
- Abdomen without black bullae on tergite V; tergite VI of female not vestigial; anal cell usually produced at lower angle, if not then second antennal segment is apically produced to beyond base of arista ..... 5
- 5 Pleuroterga with long hairs ..... Euphrantini
- Pleuroterga without long hairs ..... 6
- 6 Generally dark-bodied; ocellar bristles generally present; arista usually bare or pubescent, rarely plumose; female with tergite VI generally well developed and aculeus without subapical setae ..... Trypetini
- Generally pale-bodied; ocellar bristles generally vestigial or absent; arista usually plumose, rarely pubescent or bare; female with tergite VI generally short and aculeus with subapical setae ..... Acanthonevrini

## Tribe TRYPETINI Loew

Type-genus *Trypeta* Meigen, 1803.

**Diagnosis:** Head with antennal segments II and III short; arista normally bare or pubescent, rarely plumose; 2 or 3 inferior and 1 or 2 superior orbital bristles; ocellar bristles generally well developed, sometimes reduced or absent. Thorax with a full complement of bristles, the dorsocentrals generally well behind the line of the anterior supra-alars, rarely on or before this line; 4 scutellar bristles, rarely 6, 8 or 10. Pleuroterga bare. Metathorax with postcoxal bridge partly membranous. Anal cell with an apical extension, normally short and broad, occasionally somewhat elongate, but broadest basally; discal cell not greatly narrowed at base; stigma not vestigial; costal bristle often present. Abdomen short to oval. Female with tergite VI well developed; usually with 3 spermathecae, sometimes 2; aculeus normally short and broad, often serrate, occasionally laterally compressed, without subapical setae.

**Discussion:** Several American genera have a plumose arista and/or six scutellar bristles and in this resemble the Acanthonevrini but they all have well developed ocellar bristles and, as noted by Foote (1980), are best kept in the Trypetini. These are: *Molynocoelia* Giglio-Tos, *Blepharoneura* Loew, *Hexaresta* Hering, *Hexachaeta* Loew, *Ceratodacus* Hendel and *Pyrgatoides* Curran. Their wing-patterns are also Trypetini-like. The African *Baryglossa* Bezzi also has six scutellars and was included in the Acanthonevrini by Cogan and Munro (1980) but has well developed ocellars and a serrate aculeus very similar to that of *Blepharoneura* (R. H. Foote, pers. comm.) and also appears to belong to this tribe, as do two Oriental genera, *Xarnuta* Walker and *Platystomopsis* Hering, with eight to ten scutellars. Other included genera are: *Trypeta* Meigen, *Vidalia* Robineau-Desvoidy, *Hoplandromyia* Bezzi, *Euleia* Walker, *Acidiella* Hendel, *Chenacidiella* Shiraki,

*Hemilea* Loew, *Myoleja* Rondani, *Anomoia* Walker, *Taomyia* Bezzi, *Sclerophithus* Munro, *Paracanthoneura* Hardy, *Notomma* Bezzi, *Notommoides* nov., *Piestometopon* de Meijere, *Agaristina* Hering, *Acidia* Robineau-Desvoidy, *Callistomyia* Bezzi, *Myiopardalis* Bezzi, *Gonioglossum* Rondani, *Rhagoletis* Loew, *Zonosemata* Benjamin, *Oedicarena* Loew, *Polionota* van der Wulp, *Rhagoletotrypeta* Aczél, *Chetostoma* Rondani, *Epochra* Loew, *Paraterellia* Foote, *Lezca* Foote, *Parastenopa* Hendel, *Gerrhoceras* Hering, *Hetschkomyia* Hering, *Pseudophorellia* Costa Lima, *Haywardina* Aczél, *Cryptoplagia* Aczél, *Epochrinopsis* Hendel, *Tomoplagia* Coquillett, *Stoneola* Hering, *Gymnocarena* Hering. However, some of the above Neotropical genera (e.g. *Pyrgatoides*, *Polionota*, *Gerrhoceras*, *Hetschkomyia*, *Tomoplagia*) may belong to the *Tephritinae* (A. Norrbom, pers. comm.).

This tribe is widespread throughout the world, being especially well developed in northern temperate regions. Hosts are very varied, *Trypeta*, *Vidalia*, *Hoplandromyia* and *Euleia* are leaf miners on Compositae, Umbelliferae, Rubiaceae and Juglandaceae, *Myiopardalis* and *Gonioglossum* infest the fruit of Cucurbitaceae, *Sclerophithus* the fruit of Strychnaceae, *Anomoia* the fruit of Verbenaceae, *Myoleja* the fruit of Verbenaceae, Caricaceae and Aquifoliaceae, *Callistomyia* the fruit of Rutaceae and Barringtoniaceae, *Paraterellia* the fruit of Cupressaceae, *Zonosemata* and *Oedicarena* the fruit of Solanaceae and *Rhagoletis* the fruit of several families, whilst *Epochra* breeds in currants (Vitaceae), *Taomyia* in Agavaceae (? fruit) and *Notomma* forms galls on twigs of *Acacia* and *Dichrostachys* (Leguminosae).

### Tribe ZACERATINI nov.

Type-genus *Zacerata* Coquillett, 1924.

*Diagnosis:* Head with antennal segments II and III very elongate; arista bare; 3 inferior and 2 superior orbital bristles; ocellar bristles well developed. Thorax black with a grey reticulation on mesonotum; humeral and notopleural calli and scutellum shining black; with a full complement of bristles, the dorsocentrals placed well behind the supra-alars; 4 scutellar bristles. Pleuroterga bare. Metathorax with postcoxal bridge partly membranous. Anal cell short and without an extension, apically blunt, the cross-vein outwardly curved; discal cell greatly narrowed at base; stigma vestigial; costal bristle not developed; vein  $R_{4+5}$  bare. Abdomen oval, the tergites with a grey reticulation as on mesonotum. Female tergite VI shorter than tergite V; with three oval, weakly sclerotized spermathecae; aculeus broad, apically pointed, without subapical setae. Mid tibiae with one long and one short apical black spines.

*Discussion:* The peculiar black and grey pattern of the body, elongate antennae, short, apically blunt anal cell, basally narrowed discal cell and vestigial stigma separate *Zacerata* from other Trypetinae, whilst the well developed ocellars, position of the dorsocentrals and broad, apically pointed aculeus suggest an affinity with the Trypetini. However, it does not appear to be allied closely to any genus in the Trypetini and is best referred to a separate tribe.

This tribe is known only from Southern Africa and includes the sole genus *Zacerata* Coquillett. Hosts are the fleshy stems of *Asparagus* spp. (Liliaceae).

### Tribe RIVELLIOMIMINI nov.

Type-genus *Rivelliomima* Bezzi, 1924.

*Diagnosis:* Head with antennal segments II and III short; arista pubescent; 2 to 4 inferior and 2 superior orbital bristles; ocellar bristles absent. Thorax pale, often



with dorsolateral dark lines on mesonotum; with a full complement of mostly fulvous bristles; dorsocentrals placed on or only a little behind the line of anterior supra-alars; 4 scutellar bristles. Pleuroterga bare. Metathorax with postcoxal bridge partly membranous. Anal cell without an extension but apically acute, the cross-vein straight and inwardly oblique; stigma not vestigial; costal bristle at base of stigma distinct but not long; vein  $R_{4+5}$  bare except for a few fine setae at extreme base. Abdomen rounded, with distinct black bullae on lateral margins of tergite V. Female tergite VI vestigial, not visible from above; with three elongate spermathecae; aculeus slender and apically pointed, with minute serrations but without subapical setae. Mid tibiae with one long and one shorter apical spines.

*Discussion:* The peculiar abdomen, with the black bullae on tergite V in both sexes and vestigial tergite VI in the female, coupled with the shape of the aculeus, shape of the anal cell and lack of ocellar bristles, serve to distinguish this tribe from the Trypetini and Acanthonevrini. The narrow, dark-margined, white pleural stripe from humeral callus to wing base, and the dark dorsolateral stripes on the mesonotum, are similar to those seen in many Euphrantini, whilst the distinct, but relatively short costal bristle at base of the stigma is similar to that in many Trypetini and some Acanthonevrini.

This tribe occurs in Southern Africa, Southeast Asia and Micronesia. Included genera are *Rivelliomima* Bezzi, *Xanthanomoea* Bezzi and *Cycasia* Malloch. Malloch (1942) and Hardy (1973) referred *Cycasia* to the Euribiini (= Myopitini), but the latter noted that it differed in a number of characteristics from all known genera in that tribe. It also differs from all true Myopitini in the presence of three spermathecae. Only the host of *Cycasia* is known; it has been bred from *Cycas* (Cycadaceae) in Guam (Malloch 1942).

### Tribe ACANTHONEVRINI Hering

Type-genus *Acanthonevra* Macquart, 1843.

*Diagnosis:* Head with antennal segments II and III short; arista generally plumose, rarely pubescent or bare; 1 to 3 inferior and 2 superior orbital bristles, the upper superior orbital sometimes reduced; ocellar bristles generally minute or absent, rarely well developed. Thorax often with some bristles absent; dorsocentrals generally well behind line of anterior supra-alars, rarely close to this line; 4 or 6 scutellar bristles. Pleuroterga bare. Metathorax with postcoxal bridge partly membranous. Anal cell usually with a short, broad extension, occasionally this extension is absent or nearly so; stigma often elongate; costal bristle at base of stigma distinct or not. Abdomen oval. Female tergite VI generally short; with three spermathecae; aculeus blunt at tip, tactile, with subapical setae. Male aedeagal apodeme with vanes typically short, fused basally and forked apically.

*Discussion:* Three New Guinea genera, *Epacrocerus* Hardy, *Tanymetopus* Hardy and *Udamolobium* Hardy, are unusual in having the anal cell very weakly or not extended apically, the second antennal segment lobate on inner margin, extending beyond bases of arista, one inferior orbital bristle and the upper superior orbital weak, a well developed costal bristle at base of stigma, and the dorsocentral bristles close to the line of the anterior supra-alars (Hardy 1982). Several species in these genera also have an additional pair of postalar bristles just before the scutellum, in line with the basal scutellars. However, the aculeus is typical of the Acanthonevrini, the well developed costal bristle is seen also in several other genera and the additional postalar bristles also oc-

cur in *Themarictera* Hendel. Thus these genera appear to belong to the Acanthonevrini despite the short anal cell and other characters. Other included genera are: *Afrocneros* Bezzi, *Ocnarioxa* Speiser, *Ptiloniola* Hendel, *Labeschatia* Munro, *Aethiothemara* Hendel, *Acanthoneura* Macquart, *Cribrorioxa* Hering, *Diarrhegma* Bezzi, *Dirioxa* Hendel, *Ectopomyia* Hardy, *Freyomyia* Hardy, *Hexacinia* Hendel, *Hexamela* Zia, *Hexaptilona* Hendel, *Mimosophira* Hardy, *Ortalotrypeta* Hendel, *Phorelliosoma* Hendel, *Staurellina* Hering, *Sophiroides* Hendel, *Rioxa* Walker, *Themara* Walker, *Themarohystrix* Hendel, *Tritaeiopteron* de Meijere, *Trypanocentra* Hendel, *Yunacantha* Chen & Zia, *Sophira* Walker, *Exallosophira* Hardy, *Dacopsis* Hering, *Xenosophira* Hardy, *Chaetomerella* de Meijere, *Felderimyia* Hendel, *Heterosophira* Hardy, *Antisophira* Hardy, *Ortaloptera* Edwards, *Cleitamiphanes* Hering, *Terastomyia* Bigot, *Colobostrotter* Enderlein, *Notobeia* Shiraki, *Pelmatops* Enderlein, *Pseudopelmatops* Shiraki, *Copiolepis* Enderlein, *Clusiosoma* Malloch, *Clusiomorpha* Hering, *Rabaulia* Malloch, *Rabauliomorpha* Hardy.

This tribe is widespread in Southeast Asia, extending to Africa and Australasia. Hosts are varied. *Themarictera* breeds in the fruit of Capparidaceae, *Dirioxa* in the fruit of Capparidaceae, Sapotaceae and Myrtaceae, *Clusiosoma* in the fruit of Moraceae, *Dacopsis* in the bark of newly felled trees, *Afrocneros* and *Ocnarioxa* in the stems of *Cussonia* (Araliaceae).

### Tribe EUPHRANTINI Hering

Type-genus *Euphranta* Loew, 1862.

**Diagnosis:** Head with antennal segments II and III short; arista plumose or pubescent; 1 to 3 inferior and 0 or 1 superior orbital bristles; ocellar bristles minute or absent. Thorax often with some bristles absent; dorsocentrals generally well behind line of anterior supra-alars; 2 or 4 scutellar bristles. Pleuroterga with fine erect hairs. Metathorax with postcoxal bridge partly membranous. Anal cell with a short, broad but distinct extension; usually without a distinct costal bristle at base of stigma. Legs with at least hind femora unspined. Abdomen elongate-oval. Female tergite VI generally short; with three spermathecae; aculeus generally blunt, often with subapical setae, sometimes pointed. Male aedeagal apodeme with vanes short, fused basally and forked apically.

**Discussion:** The combination of pleurotergal hairs and partly membranous postcoxal bridge on the metathorax serve to define this tribe. Included genera are: *Conradtina* Enderlein, *Celidodacus* Hendel, *Xaniossternum* Enderlein, *Coelopacidia* Enderlein, *Trypanophion* Bezzi, *Coelotrypes* Bezzi (= *Euphrantochlaena* Hering), *Euphranta* Loew (= *Rhacochlaena* Loew), *Dimeringophrys* Enderlein, *Ptilona* van der Wulp, *Tetrameringophrys* Hardy, *Soita* Walker, *Scolocolus* Hardy, *Elleipsa* Hardy, *Cyclopsia* Malloch, *Ichneumonosoma* de Meijere, *Acinoeuphranta* Hardy, *Phantasmia* Hendel.

This tribe is widespread in Africa and Southeast Asia, extending to Europe and Australasia. The known hosts are varied. *Coelopacidia* breeds in the stems of Compositae and Umbelliferae, *Coelotrypes* infests the buds of *Ipomoea* (Convolvulaceae) and *Euphranta* has been bred from stems of Orobanchaceae, pods of *Cassia* (Leguminosae), fruit of various families, including mangroves (Rhizophoraceae), and even from hymenopterous galls on the leaves of willows (Salicaceae).

### Tribe ADRAMINI Hendel

Type-genus *Adrama* Walker, 1859.

**Diagnosis:** Head with antennal segments II and III short or segment III very

elongate; arista plumose or bare; 2 or 3 inferior and 1 superior orbital bristles; ocellar bristles absent. Thorax with humeral, presutural, dorsocentral and sternopleural bristles absent; 2 or 4 scutellar bristles. Pleuroterga with fine erect hairs. Metathorax with postcoxal bridge broadly sclerotized. Anal cell with a short, broad but distinct extension; no distinct costal bristle at base of stigma. Legs with all femora spinose below. Abdomen elongate. Female tergite VI generally short; with three spermathecae; aculeus apically pointed. Male aedeagal apodeme with vanes slender and widely separated.

*Discussion:* The concepts of this tribe are not well understood. In earlier literature it was placed as a tribe of the Dacinae, based on its reduced chaetotaxy, but the presence of hairs on the pleuroterga, elongate abdomen and three spermathecae show it to be closely related to the Euphrantini, as suggested by Hardy (1973, 1974). The precise limits of the tribe are poorly defined; Hardy (1973, 1974, 1977) and Cogan and Munro (1980) included several genera that appear to belong elsewhere. The tribe is restricted here to those genera with a combination of pleurotergal hairs, broadly sclerotized metathoracic postcoxal bridge and acuminate anal cell. Three genera are included: *Adrama* Walker, *Meracanthomyia* Hendel and *Munromyia* Bezzi.

The tribe occurs in Africa and Southeast Asia, extending to Australia. *Adrama* infests the seeds of tea (Theaceae) and fruit (? seeds) of mangroves (Barringtoniaceae), whilst *Munromyia* breeds in the seeds of wild olives (Oleaceae).

### Tribe PHYTALMIINI Bigot

Type-genus *Phytalmia* Gerstacker, 1860.

*Diagnosis:* Head with antennal segments II and III short; arista plumose; 0 to 2 inferior and 0 or 1 superior orbital bristles (sometimes a weak upper superior orbital); ocellar bristles minute or absent. Thorax with presutural, prescutellar and sternopleural (and often other) bristles absent; dorsocentrals present or absent, when present placed well behind line of anterior supra-alars; 2 or 4 scutellars or only 2 tubercles, the bristles absent. Pleuroterga bare. Metathorax with postcoxal bridge broadly sclerotized. Anal cell blunt, without an extension; no distinct costal bristle at base of stigma; wing base narrow or very narrow; stigma narrow and often elongate, vein  $R_1$  meeting costa at an acute angle. Abdomen elongate. Female tergite VI generally short; with three spermathecae; aculeus apically pointed. Male aedeagal apodeme with vanes fused basally and forked apically.

*Discussion:* The concepts of this tribe are also poorly understood. McAlpine and Schneider (1978) redefined the tribe but Hardy (1983a) disagreed with the importance placed on some of the characters used, particularly those of the male genitalia. *Sosiopsila* Bezzi was included in the Adramini by Cogan and Munro (1980) and Munro (1985) but it lacks the pleurotergal hairs and acuminate anal cell typical of that tribe and agrees with the concept of the Phytalmiini outlined above. The absence of pleurotergal hairs appears to be secondary, since the sclerotization of the metathoracic postcoxal bridge and loss of numerous bristles indicate a close affinity with the Adramini. The following genera are included: *Adramoides* Hardy, *Pseudosophira* Malloch, *Phytalmia* Gerstacker, *Diplochorda* Osten Sacken (= *Nesadrama* Perkins), *Sessilina* McAlpine & Schneider, *Robertsonomyia* Hardy, *Sosiopsila* Bezzi.

This tribe occurs in Africa, Thailand, the Philippines, New Guinea and Australia. *Phytalmia* breeds in the bark of newly felled trees whilst *Robertsonomyia* has been bred from the stems of bamboo.

## THE AFROTROPICAL FAUNA

Twenty-seven genera and 96 species of Trypetinae have been described from the Afrotropical Region, including those described below. All seven tribes are represented. Except for the Madagascan species of Trypetini described by Hancock (1985), references to original descriptions of genera and species are given by Cogan and Munro (1980), who also recorded the known distributions of the species.

Certain genera included in the Trypetinae, as recognized here, by Cogan and Munro (1980) or Hancock (1985) appear to belong elsewhere. *Ocnerioxyna* Séguy is a senior synonym of *Allotrypomyia* Cogan & Munro and belongs to the Aciurinae. *Acidoxantha* Hering, *Acidoxanthopsis* Hering and *Xanthorrhachista* Hendel are referable to the Ceratitinae, whilst *Pterope* Munro and *Xenodorella* Munro appear to belong to the Tephritinae, as does the 'undescribed genus of Trypetinae' of Cogan and Munro (1980).

The Afrotropical genera may be identified by the following key.

## KEY TO AFROTROPICAL GENERA

- 1 Ocellar, postocellar, occipital, humeral, presutural, dorsocentral and sternopleural bristles absent; metathoracic postcoxal bridge broadly sclerotized ..... 2
- The above bristles not all absent; metathoracic postcoxal bridge partly membranous ..... 4
- 2 Anal cell not drawn out at lower angle; pleuroterga bare; femora without ventral spines; antennae shorter than face; arista plumose; 2 scutellar bristles (Phytalmiini) ..... *Sosiopsila*
- Anal cell with lower angle drawn out to a short point; pleuroterga with long hairs; femora ventrally spinose; antennae much longer than face (Adramini) ..... 3
- 3 Arista plumose; 2 scutellar bristles ..... *Meracanthomyia*
- Arista bare; 4 scutellar bristles ..... *Munromyia*
- 4 Second and third antennal segments elongate, subequal; body with grey reticulate pattern; stigma vestigial; discal cell narrowed basally; anal cell outwardly rounded, not produced at lower angle (*Zaceratini*). ..... *Zacerata*
- Second and third antennal segments not elongate; body not grey-patterned; stigma not vestigial; discal cell not narrowed basally; anal cell apically acute or produced at lower angle ..... 5
- 5 Abdomen with black bullae on tergite V; tergite VI in female vestigial; anal cell acute but not produced at lower angle, the cross-vein straight; ocellar bristles absent; dorsocentral bristles close to line of anterior supra-alars; bristles fulvous (*Rivelliomimini*) ..... 6
- Abdomen without black bullae on tergite V; tergite VI in female not vestigial; anal cell produced at lower angle, the cross-vein bent; bristles not as above ..... 7
- 6 i-m cross-vein in middle of wing, inwardly oblique, the lower angle of the very short discal cell therefore acute ..... *Xanthanomoea*
- i-m cross-vein in outer part of wing, outwardly oblique, the discal cell not very short ..... *Rivelliomima*
- 7 Pleuroterga with long hairs; abdomen elongate; ocellar bristles absent; 2 or 4 scutellar bristles (*Euphrantini*) ..... 8
- Pleuroterga bare; abdomen oval or subtriangular; ocellar bristles often present; 2, 4 or 6 scutellar bristles ..... 13
- 8 Mesosternum clothed on anterior half with short and numerous spine-like bristles; dorsocentral bristles placed on line of anterior supra-alars; 2 scutellar bristles; abdomen compressed and rather curved ..... *Xaniossternum*
- Not as above ..... 9
- 9 Fore and mid femora ventrally spined; presutural bristles present ..... 10
- Femora not ventrally spined; presutural bristles absent; fore femora with one or more dorsal bristles ..... 11

- 10 Apical portion of wing largely dark with a hyaline apical spot; last portion of vein  $R_{4+5}$  straight; prescutellar bristles present ..... *Celidodacus*
- Apical portion of wing largely hyaline with a dark band along costa; last portion of vein  $R_{4+5}$  bent downwards; prescutellar bristles absent ..... *Conradina*
- 11 No distinct mesopleural bristle; 2 scutellar bristles ..... *Trypanophion*
- A distinct mesopleural bristle present; 4 scutellar bristles ..... 12
- 12 Middle tibiae with 2 apical spurs; hind femora without a row of dorsal bristles; dorsocentral bristles weak or absent ..... *Coelopacidia*
- Middle tibiae with 1 apical spur; hind femora with a row of dorsal bristles; dorsocentral bristles present ..... *Coelotrypes*
- 13 Stigma elongate; ocellar bristles rudimentary or absent; 4 or 6 scutellar bristles, if 4 then pteropleural bristle absent, if 6 then arista pubescent or plumose; vein  $R_{2+3}$  often sinuous; aculeus with subapical setae (*Acanthonevrini*) ..... 14
- Stigma short and/or ocellar bristles well developed; 4 or 6 scutellar bristles, if 4 then pteropleural bristles present, if 6 then arista bare; vein  $R_{2+3}$  straight; aculeus without subapical setae (*Trypetini*) ..... 19
- 14 6 scutellar bristles ..... 15
- 4 scutellar bristles ..... 16
- 15 Sternopleural bristle strong; middle scutellar bristles not weaker than outers; veins  $R_{4+5}$  and  $M_{1+2}$  divergent distally; head of male not broadened ..... *Aethiothemara*
- Sternopleural bristle weak or absent; middle scutellar bristles weaker than outers; veins  $R_{4+5}$  and  $M_{1+2}$  with their last portions parallel; head of male broadened ..... *Themarictera*
- 16 Presutural, anterior supra-alar, prescutellar and sternopleural bristles all absent .... *Labeschatia*
- These bristles not all absent ..... 17
- 17 Arista plumose; 2 mesopleural bristles; wing almost entirely dark brown ..... *Ptiloniola*
- Arista pubescent or bare, if plumose then only 1 mesopleural bristle and wing with a transverse hyaline band ..... 18
- 18 Stigma shorter than outer costal cell; 2 mesopleural bristles; wing with hyaline indentation in marginal cell extending below vein  $R_{2+3}$  but separated from indentation in second posterior cell ..... *Afrocneros*
- Stigma as long or longer than outer costal cell; 1 mesopleural bristle or with a weak lower; hyaline indentation in marginal cell either not crossing vein  $R_{2+3}$  or forming a complete transverse band in second posterior cell ..... *Ocnerioxa*
- 19 6 scutellar bristles ..... *Baryglossa*
- 4 scutellar bristles ..... 20
- 20 Wing with none or only a single hyaline indentation from costa in marginal cell, not reaching vein  $R_{2+3}$  ..... 21
- Wing with one large or two hyaline indentations from costa in marginal cell, crossing vein  $R_{2+3}$  ..... 24
- 21 Dorsocentral bristles placed close to line of anterior supra-alars; wings narrow, largely brown on anterior half with a small hyaline indentation in marginal cell ..... *Hemilea*
- Dorsocentral bristles placed well behind line of anterior supra-alars, close to prescutellars; wings not as above ..... 22
- 22 Bristles whitish; ocellar bristles absent; wing with a yellow band in marginal cell with a hyaline indentation from costa ..... *Notommoides* nov.
- Bristles dark; ocellar bristles present; wing without a hyaline indentation from costa in marginal cell ..... 23
- 23 Wing with a large rounded discal spot and curved bands; second posterior cell very short; middle scapular bristles absent ..... *Taomyia*
- Wing bands longitudinal, yellow; second posterior cell not very short; middle scapular bristles present ..... *Notomma*
- 24 Wing with three narrow transverse dark bands, with a broad hyaline indentation in marginal cell to hind margin; scutellum yellow with a broad basal brown band ..... *Sclerophithus*
- Wing not as above, with two hyaline indentations in marginal cell; scutellum not as above ..... 25

- 25 1 superior orbital bristle; inferior orbital bristles horn-like in male, normal in female; medial band of wing absent; ocellar bristles absent ..... *Hoplandromyia*  
 — 2 superior orbital bristles; inferior orbital bristles normal in both sexes; medial band of wing present, even if only a spot; ocellar bristles present but often much reduced ..... 26  
 26 Wing pattern brown, becoming yellow basally; body reddish-yellow ..... *Euleia*  
 — Wing pattern blackish-brown; body black ..... *Myoleja*

### Tribe Trypetini

#### Genus *BARYGLOSSA* Bezzi

This genus was included in the Acanthonevrini by Cogan and Munro (1980), based on the presence of six scutellar bristles. However, this is an unreliable tribal character and the presence of well developed ocellar bristles and a broad, serrate aculeus show that *Baryglossa* is best referred to the Trypetini. Seven species are known from tropical Africa; for a key to species see Munro (1957).

Included species are: *bequaerti* Bezzi, *emorsa* Munro, *histrion* Bezzi, *mimella* Munro, *oldroydi* Munro, *tersa* Munro, *trulla* Munro.

#### Genus *HEMILEA* Loew

This genus also resembles Acanthonevrini in having a rather elongate stigma but it also has well developed ocellars and a broad, serrate aculeus and is better placed in the Trypetini. It is a largely Oriental and Palearctic genus, represented in the Afro-tropical Region by a single species, *H. malgassa* Hancock, from Madagascar.

#### Genus *EULEIA* Walker

Two species of this widespread genus are known from the region, *E. fossataeformis* (Bezzi) from Malawi and *E. inconspicua* Hancock from Madagascar. The larvae of temperate species are known to mine the leaves of Rubiaceae, Compositae and Umbelliferae.

#### Genus *HOPLANDROMYIA* Bezzi

Referred to the group of 'unplaced genera near Acanthonevrini' by Cogan and Munro (1980), this genus differs from related Trypetini in the lack of ocellar bristles. However, the shape of the aculeus, wing pattern and larval habits support its inclusion in this tribe. The larvae of the Madagascan species *H. madagascariensis* Hancock mine the leaves of *Canthium* (Rubiaceae). Other species are *H. tetracera* Bezzi from Réunion, *H. buhri* Hering from Cameroon and *H. junodi* Bezzi from South Africa (subsp. *junodi*) and Ethiopia (subsp. *distata* Munro).

#### Genus *MYOLEJA* Rondani

This widespread genus is represented by nine species in this region. As in the case of *Euleia fossataeformis*, species referred to this genus by Hancock (1985) were treated as 'unplaced species of Aciurinae' by Cogan and Munro (1980). In North America and South-east Asia larvae of this genus infest the fruits of Aquifoliaceae, Verbenaceae and Caricaceae. This and the presence of scapular bristles excludes them from the Aciurinae; the broad aculeus and wing pattern places them in the Trypetini.

Included species are: *atrata* (Munro) and *cerataex* (Munro) from Zaire, *homo-*

*genea* (Bezzi) from Malawi and South Africa, *seychellensis* (Lamb) from the Seychelles, *andobana* Hancock, *mailaka* Hancock, *perineta* Hancock, *sandrangato* Hancock and *tsaratanana* Hancock from Madagascar.

### Genus *SCLEROPITHUS* Munro

This was also referred to the group of 'unplaced genera near Acanthonevrini' by Cogan and Munro (1980), but its characters are typically trypetine. It appears to be related to *Taomyia* Bezzi and has similarly robust male genitalia. The sole species, *S. glaphyrochalyps* Munro, occurs in Natal, where it has been bred from the fruit of *Strychnos heningsii* (Strychnaceae). It is figured here (Fig. 2) for the first time. *M. tsaratanana* may be closer to this genus than to *Myoleja*.

### Genus *TAOMYIA* Bezzi

Also referred to the group of 'unplaced genera near Acanthonevrini' by Cogan and Munro (1980), this is another genus with typically trypetine characters. Three species are known, *T. marshalli* Bezzi from Kenya, Zimbabwe and Natal, *T. ocellata* (Lamb) from the Seychelles, and *T. pictipennis* Hancock from Madagascar. *T. marshalli* has been bred from *Sansevieria* (Agavaceae) in Kenya and is figured here (Fig. 3). The female has only two spermathecae (Fig. 4) and a broad, apically pointed aculeus (Fig. 5).

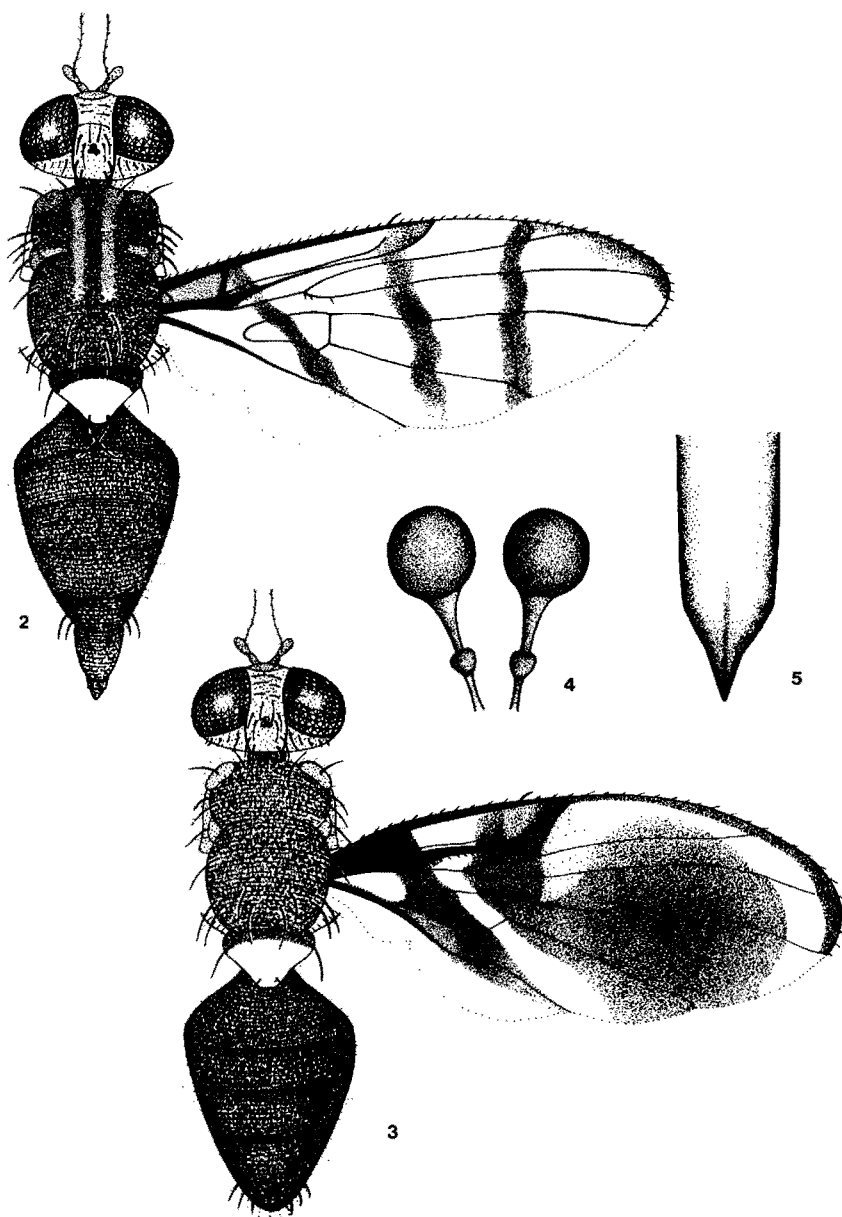
### Genus *NOTOMMA* Bezzi

This was referred to the 'unplaced genera of Aciurinae' by Cogan and Munro (1980) but the larval habits and presence of scapular bristles exclude it from that subfamily. Larvae form galls on twigs of *Acacia gerrardii* (*N. jucundum* (Loew)) and *Dicrostachys cinerea* (*N. galbanum* Munro), both Leguminosae, and the female has the aculeus laterally compressed (Fig. 6). The presence of three spermathecae (Fig. 7) confirms its placement in the Trypetini. The six African species, *berylinum* Munro, *bioculatum* Bezzi (= *fuellborni* (Enderlein)), *dissolutum* (Bezzi), *galbanum* Munro, *jucundum* (Loew) and *mutilum* (Bezzi) were revised by Munro (1952); to these is added *N. munroi* Hancock from Madagascar. *N. galbanum* is figured here (Fig. 8); both this and *N. jucundum* occur in Zimbabwe.

### Genus *NOTOMMOIDES* nov.

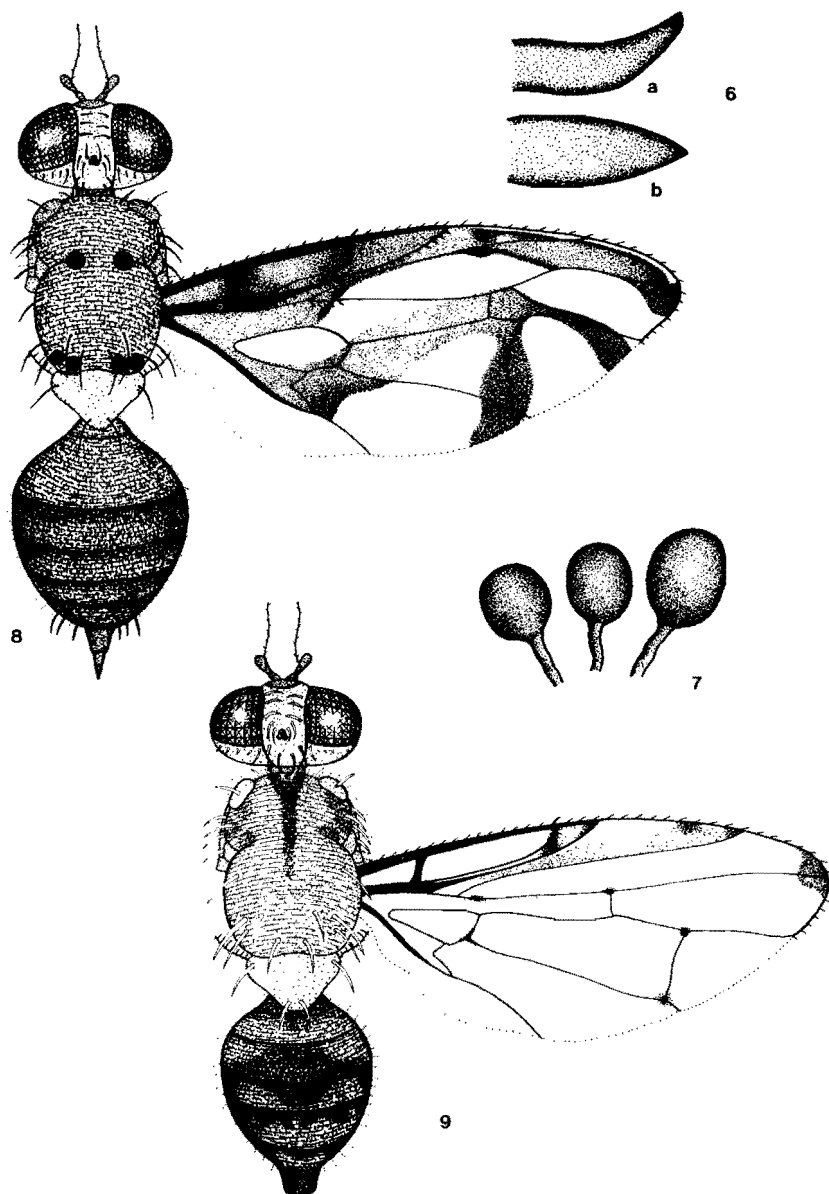
Type-species *Notommoides pallidiseta* sp. nov.

This genus is referable to the Trypetini but differs from all others in the whitish bristles. Ocellar bristles are absent but all others are well developed. The position of the dorsocentral bristles, close to the prescutellars, short antennae, rounded abdomen, lack of pleurotergal hairs, well developed scapular bristles, distinct mesopleural suture, shape of the anal cell extension and relatively long tergite VI in the female show it to belong to this subfamily and tribe. It appears closest to *Notomma* but the ov scape is not laterally compressed, the arista is pubescent and the stigma is short. The gender is considered feminine.



Figs 2-5. Trypetini. 2. *Sclerophithus glaphyrochalyps*, female. 3-5. *Taomyia marshalli*. 3. Male. 4. Spermathecae. 5. Aculeus.





Figs 6–9. Trypetini. 6–7. *Notomma mutilum*. 6. Aculeus, a: lateral, b: dorsal. 7. Spermathecae. 8. *Notomma galbanum*, female. 9. *Notommoides pallidiseta* sp. nov., female.

***Notommoides pallidiseta* sp. nov., Fig. 9.**

This species may be recognized by the generic diagnosis given above and the wing pattern. The specific name is derived from the pale bristles characteristic of this taxon.

**FEMALE.** Length of body (excluding oviscapae), 4.5 mm; of wing, 4.5 mm.

**Head.** Length: height: width: 1:1.4:1.8; yellow. Frons pubescent, 0.37 times width of head at widest part; bristles whitish, 3 inferior orbitals, 2 superior orbitals. Lunule small, semicircular. Ocellar triangle brown, ocellars absent; postocellars present, whitish. Vertex with inner and outer verticals and postverticals present, all whitish. Genal bristle whitish. Face unmarked. Antennae shorter than face, fulvous, third segment apically rounded; arista with short pubescence. Occiput flat, with a row of thin, whitish occipital bristles.

**Thorax.** Mesonotum shining fulvous with grey markings and a median blackish stripe broadening to a large patch anteriorly; covered with fine, pale pubescence. Pleura whitish-fulvous. Humeral calli, notopleural calli and area between them, and both hypopleural calli whitish. Pleuroterga bare. Postnotum red-brown. Scutellum yellow, greyish on disc. Bristles well developed and whitish: 4 scapulars, 1 humeral, 1 presutural, 2 notopleural, 1 anterior supra-alar, 2 posterior supra-alars, 2 dorsocentrals, 2 prescutellars, 2 mesopleurals, 1 pteropleural, 1 sternopleural, 4 scutellars; dorsocentrals placed well behind line of anterior supra-alars, close to prescutellars. Legs pale fulvous; fore femora with a ventral row of whitish bristles; middle tibiae with an apical whitish spine. Halteres fulvous. Wing with no distinct costal bristle at base of stigma; vein  $R_{4+5}$  setulose at base, not as far as r-m cross vein; r-m a little beyond middle of discal cell; anal cell acuminate; pattern hyaline with stigma and lower half of marginal cell yellow and brown patches as follows: at base of stigma; along costa in marginal cell, one in middle and one at apex; an apical patch, its inner edge rectangular, across tip of vein  $R_{4+5}$ ; at base of vein  $R_{4+5}$ , at junction of r-m and vein  $R_{4+5}$ ; at junction of i-m cross-vein with veins  $M_{1+2}$  and  $M_{3+4}$ ; and at base of vein  $M_{3+4}$ ; costa with a brown spot at end of humeral vein.

**Abdomen.** Rounded; fulvous except tergite III and anterior margins of tergites IV to VI blackish-brown; covered with long, fine pubescence; tergite VI a little over half length of tergite V; oviscapae short, length 0.5 mm, blackish-brown with pale pubescence, conical; aculeus not extruded.

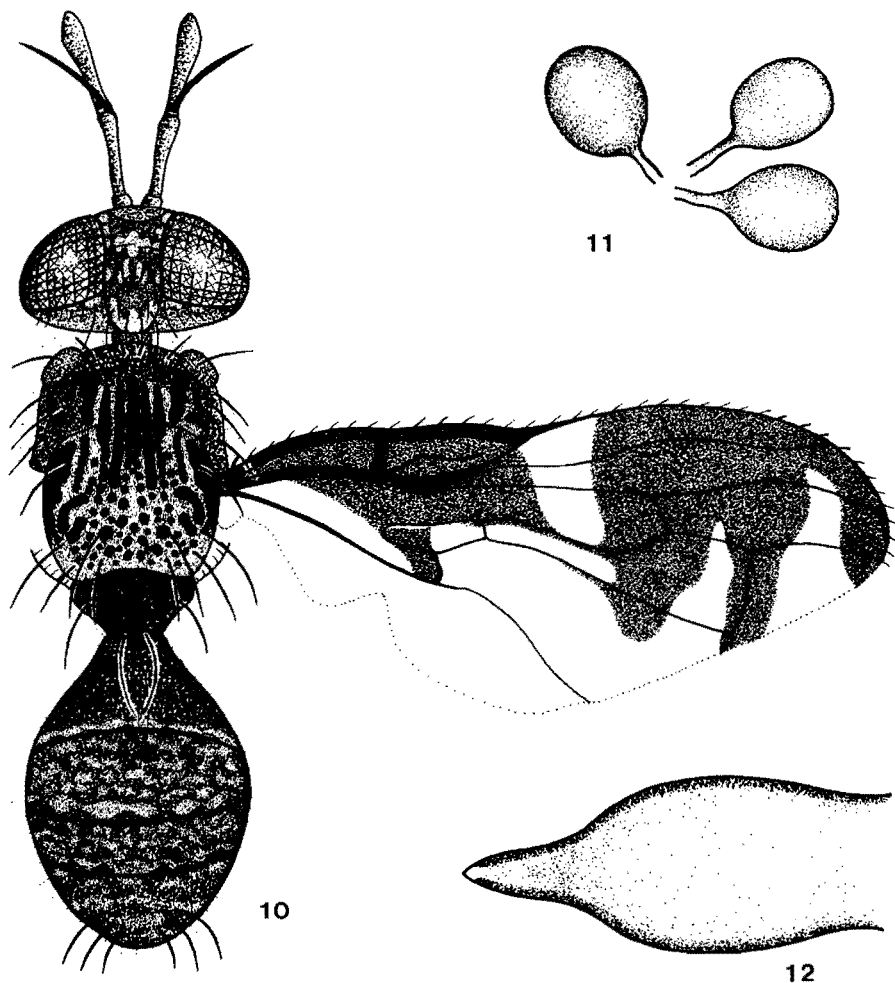
**MATERIAL EXAMINED.** Holotype ♀: MOÇAMBIQUE, Chiluvo Hills, 19° 15' S, 34° 04' E, x.1963, in Natural History Museum, Bulawayo.

**DISTRIBUTION.** Known only from the Chiluvo Hills, central Moçambique.

### Tribe Zaceratini

#### Genus *ZACERATA* Coquillett

Included in the 'unplaced genera near Acanthonevrini' by Cogan and Munro (1980) but apparently closer to the Trypetini. The sole species, *Z. asparagi* Coquillett (Fig. 10) occurs in South Africa and possibly Angola. The larvae tunnel in the stems of wild and cultivated *Asparagus* (Liliaceae) and pupate within the hollowed out stem. The female has tergite VI a little shorter than tergite V, three weakly sclerotized spermathecae (Fig. 11) and a broad aculeus (Fig. 12).

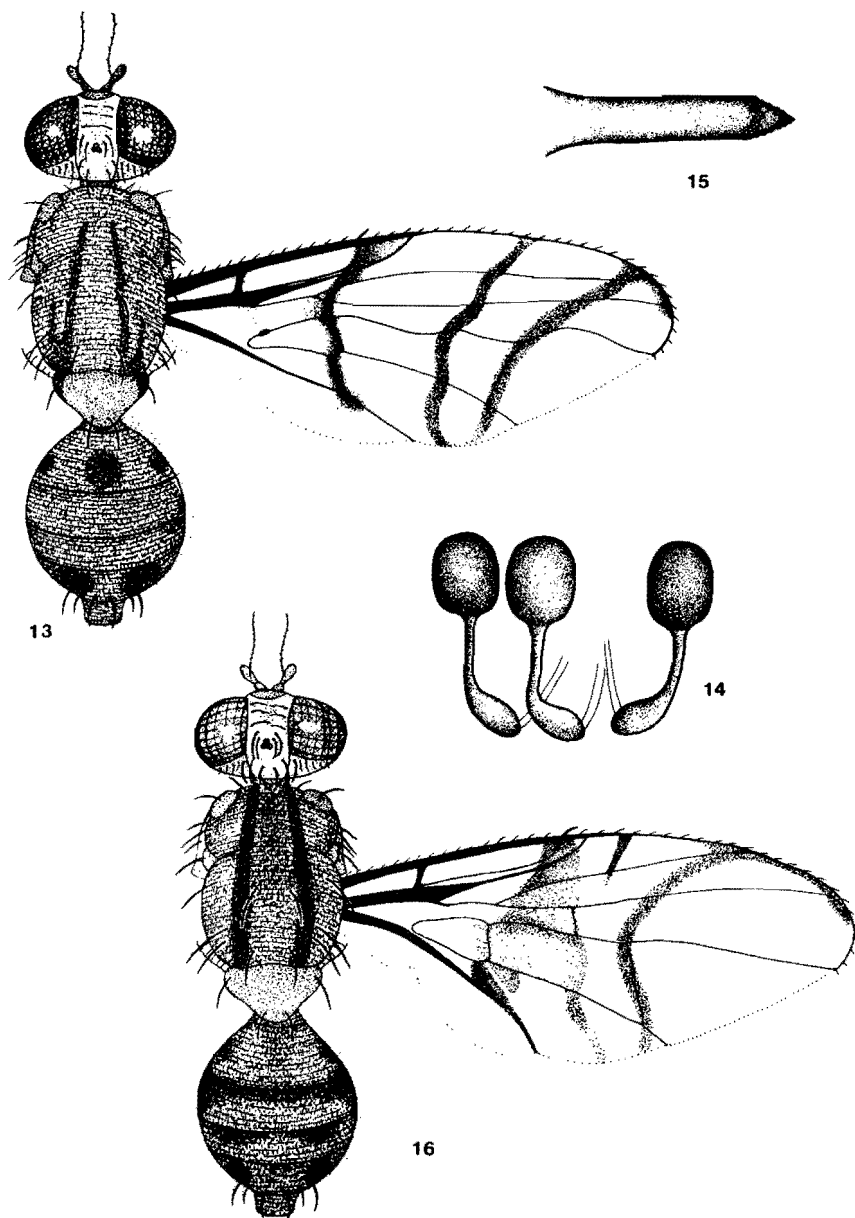


Figs 10–12. Zaceratini: *Zacerata asparagi*. 10. Male. 11. Spermathecae. 12. Aculeus.

#### Tribe Rivelliomimini

#### Genus *RIVELLIOMIMA* Bezzi

This genus was referred to the Trypetini by Cogan and Munro (1980) but does not belong there. The sole species, *R. punctiventris* Bezzi (Fig. 13), occurs in South Africa and Zimbabwe. Known localities are East London and Wyliespoort (Soutpansberg) in South Africa and Gota Gota (Hurungwe district) in Zimbabwe. The female has tergite VI vestigial, three oval spermathecae (Fig. 14) and an apically pointed aculeus (Fig. 15) with minute serrations.



Figs 13-16. Rivelliomimini. 13-15. *Rivelliomima punctiventris*. 13. Female. 14. Spermathecae. 15. Aculeus. 16. *Xanthanomoea munroi*, female.

Genus *XANTHANOMOE* Bezzi

This genus was referred to the 'unplaced genera near Acanthonevrini' by Cogan and Munro (1980) and incorrectly spelt *Xanthomoea*. However, it is obviously closely related to *Rivelliomima*. The sole species, *X. munroi* Bezzi (Fig. 16) occurs in South Africa, where known localities are Barberton and Wyliespoort (Soutpansberg) in the Transvaal.

## Tribe Acanthonevrini

Genus *AETHIOTHEMARA* Hendel

Six species and one variety of this genus are known from West Africa; for a key to species see Hendel (1928). Included species are: *fallacivena* (Enderlein) (incl. var *trispila* Bezzi), *graueri* Hendel, *speiseriana* (Bezzi), *striata* Hendel, *transiens* Hendel, *trigona* Hendel. *A. graueri* is newly recorded here from Uganda, and *A. fallacivena* var *trispila* from Zaire.

Genus *THEMARICTERA* Hendel

This genus contains a single species. *T. laticeps* (Loew) is usually regarded as distinct because of the presence of hyaline spots in the submarginal and first basal cells, these spots being absent in *T. flaveolata* (Fabricius). However, material from Zimbabwe (Fig. 17) is intermediate, having a weak spot in the submarginal cell and none in the first basal cell. Thus the differences between *laticeps* and *flaveolata* appear to be clinal and they are synonymized here. *T. pterocallina* (Enderlein) has been accepted as distinct because the original description makes no mention of the black spots next to the humeral calli on the mesonotum; otherwise it is identical to *flaveolata*. Even if these black spots are absent it is unlikely to be a distinct species and is also synonymized here. Therefore, *Trypeta laticeps* Loew, 1861 and *Stigmatothemara pterocallina* Enderlein, 1920 are regarded as new synonyms of *Dacus flaveolatus* Fabricius, 1805, of which *Themarictera rufipennis* Hendel, 1914 is also a synonym.

In the male of *T. flaveolata* the head is greatly expanded laterally; in the female it is of normal shape. In Zimbabwe, this species has been recorded from the Sapi/Zambezi confluence, Shamva and Chipinda Pools (Gonarezhou Nat. Park). The larvae breed in the fruit of *Boscia caffra* (Capparidaceae).

Genus *AFROCNEROS* Bezzi

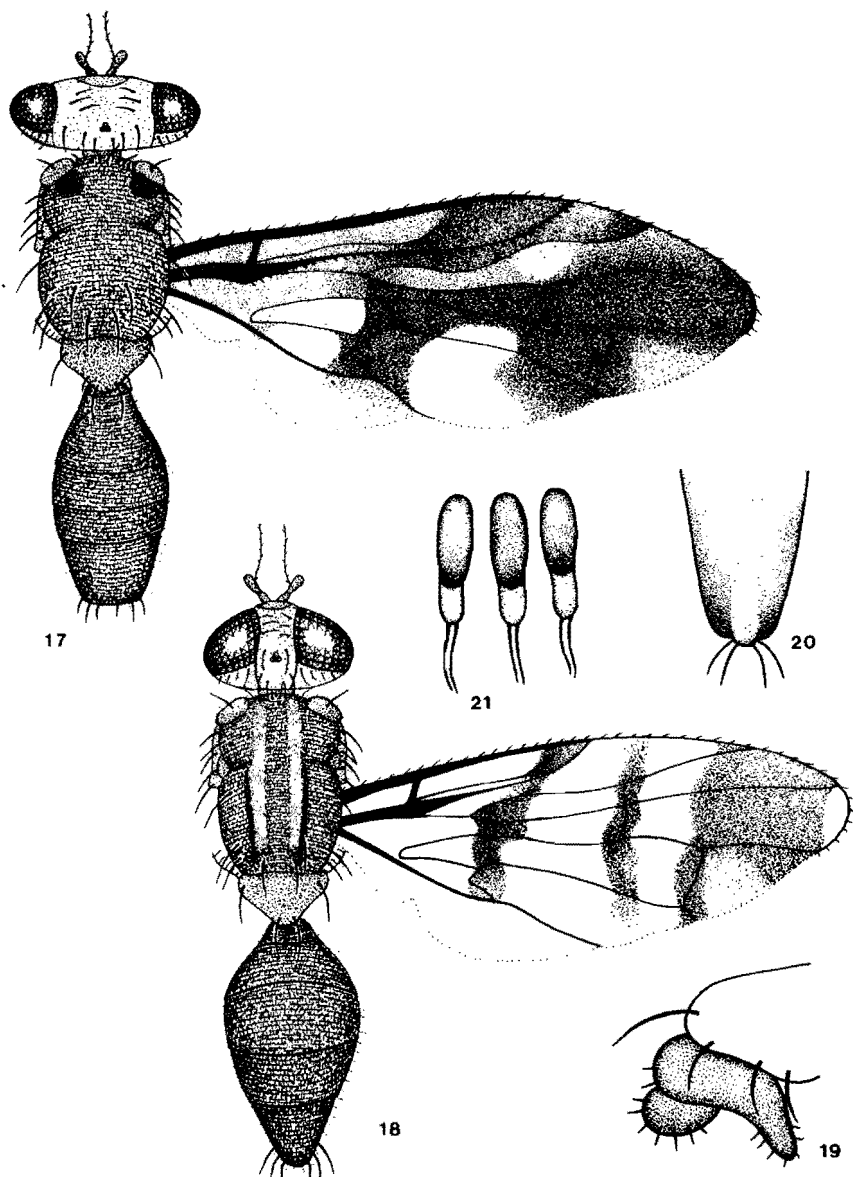
This was included in the Euphrantini by Cogan and Munro (1980) but the absence of hairs on the pleuroterga, shorter abdomen and tactile aculeus (with long subapical setae) show it to belong to the Acanthonevrini, despite the presence of only four scutellar bristles. The three species were revised by Munro (1967).

Included species are: *excellens* (Loew), *mundissimus* Bezzi and *mundus* (Loew). All occur in Southern Africa and the larvae infest the stems of *Cussonia* (Araliaceae).

Genus *OCNERIOXA* Speiser

This genus, closely related to *Afrocneros*, was also referred to the Euphrantini by Cogan and Munro (1980) but properly belongs in the Acanthonevrini. The eleven species were revised by Munro (1967).

Included species are: *bigemmata* (Bezzi), *capeneri* Munro, *cooksoni* Munro, *deli-*



Figs 17-21. Acanthonevrini and Euphrantini. 17. Acanthonevrini: *Themarictera flaveolata*, male. 18-21. Euphrantini: *Celidodacus zambeziensis* sp. nov. 18. Male. 19. Lateral view of male genitalia. 20. Tip of aculeus. 21. Spermathecae.

*neata* Hering, *discreta* Bezzi, *interrupta* Bezzi, *lindneri* Munro, *pennata* Speiser, *secata* Munro, *sinuata* (Loew), *woodi* Bezzi. The larvae infest the stems of *Cussonia* (Araliaceae).

### Genus *PTILONIOLA* Hendel

This genus was also referred to the Euphrantini by Cogan and Munro (1980) but belongs with the two preceeding genera in the Acanthonevrini. The three species were revised by Munro (1967). Included species are: *edwardsi* Munro, *rotunda* Munro and *tripunctulata* (Karsch).



### Genus *LABESCHATIA* Munro

This was included in the 'unplaced genera near Acanthonevrini' by Cogan and Munro (1980) but appears to belong to the *Afrocneros* group in the Acanthonevrini, as placed by Munro (1967). The sole species, *L. circumlineata* Munro, occurs in Malawi, Zambia and South Africa.

## Tribe Euphrantini

### Genus *CONRADTINA* Enderlein

Three species in this genus are known from Africa, whilst an undescribed species occurs in Madagascar. In this and the following genus the wing pattern, particularly the size of the hyaline apical patch, and presence or absence of black lines on the mesonotum are somewhat variable within each species and some taxa, separated on minor differences in wing pattern or mesonotal markings, appear to be synonyms.

A specimen of *C. acroleuca* (Wiedemann) from the Vumba Mts, Zimbabwe, is intermediate in wing markings between typical *acroleuca* and typical *C. limbata* Enderlein and these two taxa do not appear to be specifically separable. Similarly, *C. tristriata* (Karsch), in which the subapical brown band is divided by the hyaline apical area, appears to be a variety of *acroleuca*. The same sort of variation is seen in the taxon *C. longicornis* Enderlein, with *C. acrodiauges* Speiser and *C. limbatella* Enderlein differing in minor variations of the wing pattern and with intermediates existing. Accordingly, *C. acrodiauges* Speiser, 1913 and *C. limbatella* Enderlein, 1920 are regarded as new synonyms of *C. longicornis* Enderlein, 1911, whilst *C. limbata* Enderlein, 1920 and *Acidia tristriata* Karsch, 1887 are regarded as new synonyms of *Dacus acroleuca* Wiedemann, 1830.

*C. longicornis* occurs in Fernando Poo, Cameroon, Nigeria and Zaire, *C. acroleuca* in Sierra Leone, Cameroon, Angola, Zimbabwe and Kenya, whilst *C. suspensa* Bezzi is known only from 'Congo'. The species may be identified by the following key.

### Key to species of *Conradtina*

- 1 The two medial dark wing bands united below discal cell; an oblique dark streak across middle of last portion of vein  $M_{1+2}$ ; apex of wing dark or narrowly hyaline; mesonotum black ..... *longicornis* Enderlein
- The two medial dark wing bands separated below discal cell or confluent below vein  $R_{4+5}$ ; no oblique dark streak across last portion of vein  $M_{1+2}$ ; apex of wing hyaline ..... 2
- 2 The two medial dark bands united into a large patch below vein  $R_{4+5}$ ; mesonotum black ... *suspensa* Bezzi
- The two medial dark bands separated throughout; mesonotum red-brown ..... *acroleuca* (Wiedemann)

Genus *CELIDODACUS* Hendel

Four species occur in Africa and Madagascar. As in *Conrattina*, wing markings and presence or absence of dark thoracic markings are somewhat variable in this genus and a number of currently recognized species appear to be synonyms.

In his original characterization of *Celidodacus*, Hendel (1914) noted that the apical part of the wing was brown, with one or two white apical spots, and that the basal part of the wing had one or two brown transverse bands. This clearly indicates that Hendel had two species before him, one fitting the description and figure of *Acidia obnubila* Karsch, the other *Acidia coloniarum* Speiser, although at the time only *obnubila* had been described. Hendel (1914) named the type-species *C. apicalis* but did not describe it. Bezzi (1920) and subsequent authors assumed that *apicalis* was a synonym of *obnubila* but Karsch's species was certainly known to Hendel, at least from the literature, and it is more likely that *apicalis* referred to the other species, subsequently described by Speiser (1915) as *coloniarum*. Since the original description does not indicate which of the two species was named *apicalis*, and in the absence of type specimens, it must be regarded as a *nomen dubium*, but the evidence suggests that it belongs in the synonymy of *coloniarum*, which thus becomes the type-species of *Celidodacus*.

*Conrattina conjuncta* Enderlein, 1920 and *Celidodacus coloniarum mendax* Hering, 1940 are regarded here as new synonyms of *Acidia coloniarum* Speiser, 1915. As is usual in the genus (and indeed in many Euphrantini), there is some variation in the extent of the dark wing areas and the black thoracic markings. A dark costal band connecting the band through r-m cross-vein to the apical patch, well defined in *conjunctus*, is just visible in other specimens and lacking in typical *coloniarum*. The thoracic markings and setulose vein R<sub>4+5</sub> are identical in these two taxa. The thoracic dark stripes are absent in *mendax*, whilst the wing pattern is identical to that of *coloniarum*.

Similarly, *Conrattina fenestrata* Enderlein, 1920, *Celidodacus fenestratus oculatus* Bezzi, 1924 and *Celidodacus ornatus* Bezzi, 1924 are regarded here as new synonyms of *Acidia obnubila* Karsch, 1887. The thoracic markings, when present, of all these taxa consist of two narrow longitudinal black lines on the mesonotum and vein R<sub>4+5</sub> is setulose only at the base. The wing markings are somewhat variable. The hyaline indentation in the second posterior cell often reaches vein M<sub>1+2</sub>, extending beyond that vein in *ornatus*. In *fenestratus* the basal and apical dark areas are joined at the base of the submarginal cell but projections from both dark patches, approaching the condition seen in *fenestratus*, can be seen in some typical *obnubila*. The hyaline spot at the base of the first posterior cell is all that separates *oculatus* from *fenestratus* but this spot is seen commonly in typical *obnubila*.

*C. coloniarum* occurs in Equatorial Guinea, Nigeria, Cameroon, Zaire, Rwanda, Tanzania, Malawi, Zimbabwe and Moçambique, whilst *C. obnubila* occurs in Equatorial Guinea, Nigeria, Cameroon, Zaire, Angola, Zambia, Malawi, Kenya and Zimbabwe. *C. madagascariensis* Hering occurs in Madagascar and a new species is described below from Zimbabwe. The species may be identified by the following key.

Key to species of *Celidodacus*

- |  |   |
|--|---|
| 1 Wing with a transverse band through r-m cross-vein, separated from apical patch at least below vein R <sub>1+2</sub> .....     | 2 |
| — Wing without a separate transverse band through r-m cross-vein, the apical patch also enclosing that vein; abdomen black ..... | 3 |



- 2 Abdomen red-brown; vein  $R_{4+5}$  setulose only at base ..... *zambeziensis* sp. nov.
- Abdomen black; vein  $R_{4+5}$  setulose to beyond r-m cross vein ..... *coloniarum* (Speiser)
- 3 Vein  $R_{4+5}$  setulose only at base; mesonotum red-brown with or without two narrow longitudinal black lines ..... *obnubilus* (Karsch)
- Vein  $R_{4+5}$  setulose to beyond r-m cross-vein; mesonotum not as above ..... *madagascariensis* Hering

***Celidodacus zambeziensis* sp. nov., Figs 18–21**

This is the only known species of *Celidodacus* with a red-brown abdomen. The wing pattern resembles that of *C. coloniarum* but the inner edge of the apical patch is straighter, vein  $R_{4+5}$  is setulose only at the base and the mesonotum has the black lines much narrower. The specific name is derived from the Zambezi River.

MALE. Length of body, 8.4 mm; of wing, 6.8 mm.

Head. Length: height: width: 1:1.17:1.42; shining red-brown. Frons pubescent, 0.37 times width of head at widest part; bristles black, 3 inferior orbitals, 1 superior orbital. Lunule small, semicircular. Ocellar triangle black, ocellars absent; postocellars present. Vertex with inner and outer verticals present, postverticals absent. Genal bristle present. Face unmarked. Antennae shorter than face, fulvous; second segment with a red-brown dorsal bristle; third segment apically rounded; arista with short plumosity. Occiput flat, with a row of thin, black occipital bristles.

Thorax. Mesonotum shining red-brown with a pair of broad longitudinal submedian whitish-pollinose stripes, bordered on the outer margin by a narrow black line, sometimes these black lines absent, especially before the suture. Pleura fulvous to red-brown, with a narrow white stripe, bordered on both sides by narrow black lines, from humeral callus across top of mesopleura to wing base, continued onto humeral callus as a whitish band. Pleuroterga with long fine hairs. Postnotum and scutellum red-brown. Bristles well developed and black: 4 scapulars, 1 humeral, 1 presutural, 2 notopleural, 1 anterior supra-alar, 2 posterior supra-alars, 2 dorsocentrals, 2 prescutellars, 1 mesopleural, 1 pteropleural, 1 sternopleural, 4 scutellars; dorsocentrals placed well behind line of anterior supra-alars. Legs fulvous except middle tibiae and basal three-quarters of hind tibiae brown; fore and mid femora with a row of posteroventral spines and weaker bristles on hind femora; middle tibiae with an apical black spine. Halteres pale fulvous. Wing with no distinct costal bristle at base of stigma; vein  $R_{4+5}$  setulose only at base; r-m cross-vein a little beyond middle of discal cell; anal cell acuminate; pattern hyaline with blackish-brown markings as follows: a band from stigma to anal cell extension, the stigma yellowish except brown basally; a band from costa through r-m cross-vein and discal cell almost to hind margin; an apical patch enclosing outer portion of marginal cell and i-m cross-vein, its inner edge relatively straight, leaving a whitish apical spot and a weakly hyaline indentation, of variable size, in second posterior cell. This latter hyaline indentation sometimes reaches vein  $M_{1+2}$  or crosses it into first posterior cell.

Abdomen. Elongate; red-brown; a row of black bristles along posterior margin of tergite V; male genitalia (Fig. 19) fulvous.

FEMALE. Similar to male. Tergite VI much shorter than tergite V; oviscapae short, length 1.3 mm, red-brown with black apex; second segment fulvous; aculeus (Fig. 20) rounded at tip, with four long setae. Three elongate spermathecae (Fig. 21).

MATERIAL EXAMINED. Holotype ♂: ZIMBABWE, Sapi/Zambezi confluence,

Sapi C.H.A., 15° 12' S, 29° 35' E, 9–17.viii.1981, D. L. Hancock, ex Charaxes trap (banana bait). Paratypes: 2♂, 4♀, same data as holotype; 2♂, 1♀, Bumbusi Camp, Hwange Nat. Park, 18° 31' S, 26° 11' E, 12–13.viii.1985, J. I. Minshull, at banana bait.

Holotype and 6 paratypes in Natural History Museum, Bulawayo; 2 paratypes in National Collection of Insects, Pretoria; 1 paratype in British Museum (Natural History), London.

**DISTRIBUTION.** Known from the Zambezi River and its tributaries in northern and north-western Zimbabwe.

### Genus *XANIOSTERNUM* Enderlein

Included in the 'unplaced genera near Acanthonevriini' by Cogan and Munro (1980), the elongate abdomen suggests it does not belong there. Specimens have not been available for study but the original description of this genus (Enderlein 1920) suggests that it is related to *Trypanophion* and *Coelopacidia*. Accordingly, it is placed here in the Euphrantini. The sole species, *X. ophioneum* Enderlein is known only from Equatorial Guinea.

### Genus *TRYPANOPHION* Bezzi

This genus was included in the Adramini by Cogan and Munro (1980) and Munro (1985) but it lacks the broad sclerotization of the metathoracic postcoxal bridge and femoral spines, and appears to belong to the Euphrantini. It is closely related to *Coelopacidia*.

The sole species, *T. gigas* Bezzi, is known from Cameroon, Uganda and Zimbabwe (Vumba Mts and Chirinda Forest). The extent of the black markings on the head and thorax, particularly the pleura, and size of the brown facial spot, appear to be somewhat variable in this species, with *T. vestigiale* Hering falling within the range of variation observed. Accordingly, *T. vestigiale* Hering, 1941 is regarded here as a new synonym of *T. gigas* Bezzi, 1924.

### Genus *COELOPACIDIA* Enderlein

This genus was also included in the Adramini by Cogan and Munro (1980) and Munro (1985) but differs from true Adramini in the same way as does *Trypanophion*. The reduction of bristles seen in these two genera appears to be convergent to that seen in Adramini. Nine species have been described from Africa and Madagascar. Larvae tunnel in the stems of *Senecio* (Compositae) and *Polemannia* (Umbelliferae) and pupate within the stem.

Included species are: *apicalis* Hendel, *carinata* Hendel, *madagascariensis* Enderlein, *marriotti* (Munro), *melanostigma* Bezzi, *punctum* (Enderlein), *strigata* Bezzi, *torrida* (Enderlein), *vivax* (Munro). *C. strigata* is newly recorded here from Zimbabwe.

### Genus *COELOTRYPES* Bezzi

This genus was also included in the Adramini by Cogan and Munro (1980), whilst *Euphrantochlaena* Hering, 1940 and *Rhacochlaena* of authors (not Loew, 1862), which are regarded here as new synonyms of *Coelotrypes* Bezzi, 1924, were placed in the Euphrantini. The lack of the sclerotized metathoracic postcoxal bridge and femoral

spines exclude this genus from the Adramini, whereas the presence of pleurotergal hairs confirms its placement in the Euphrantini.

Twelve species found in Africa and Madagascar are referable to this genus. Several species have been included in *Rhacochlaena* Loew but this was placed as a synonym of *Euphranta* Loew, subgenus *Staurella* Bezzi, by Hardy (1983b), although *Rhacochlaena* has priority over *Staurella*. The Afrotropical species show a great deal of similarity to those of *Coelotrypes*, particularly in head and thoracic patterns and, to a certain extent, in wing patterns. They are separable by the setulose vein  $R_4 + 5$ , which is bare in *Coelotrypes* although *C. riplei* Munro has a couple of setae at the extreme base; in wing pattern this species also resembles '*Rhacochlaena*'. *Euphrantochlaena* Hering also fits here, differing from '*Rhacochlaena*' in the absence of prescutellar bristles, which are absent also in some species of *Coelotrypes*.

Where known, the Afrotropical species breed in the buds of *Ipomoea* (Convolvulaceae) (*C. vittatus* Bezzi, *C. pulchellus* (Bezzi)). Larvae of the type-species of *Rhacochlaena*, *R. toxoneura* (Loew), live as parasite-inquilines in the galls made by sawflies (Hymenoptera) on the leaves of willows (Salicaceae) (J.-P. Kopelke, pers. comm.); larvae of typical *Euphranta* species and of subgenus *Staurella* breed in fruit, pods or stems of various families (Hardy, 1983b). The peculiar biology of *R. toxoneura* suggests that *Rhacochlaena* should be maintained at least as a subgenus, distinct from *Staurella*. Similarly, the known biologies of *Coelotrypes* species suggest that it also is distinct from *Euphranta* and *Staurella*.

The twelve species included in this genus may be identified by the following key.

#### KEY TO SPECIES OF COELOTRYPES

- 1 Vein  $R_{4+5}$  bare; a whitish apical spot present; discal transverse dark bands absent ..... 2
- Wing  $R_{4+5}$  setulose; whitish apical spot absent or discal transverse bands present ..... 6
- 2 i-m cross-vein without infuscation; stigma largely hyaline; subapical brown patch not reaching vein  $M_{3+4}$ ; small brown spots present in marginal and submarginal cells but no transverse bands ..... **nigricornutus** Hering
- i-m cross-vein infuscated; wings not as above ..... 3
- 3 Mesonotum and scutellum without a median white stripe; abdomen fulvous ... **ripleyi** Munro
- Mesonotum and scutellum with a median white stripe; abdomen often not wholly fulvous ..... 4
- 4 Abdomen black; arista long pubescent; apical wing patch broadly crosses vein  $M_{1+2}$  ..... **nigriventris** Bezzi
- Abdomen fulvous or with black lateral margins; arista short pubescent; apical wing patch not broadly crossing vein  $M_{1+2}$  ..... 5
- 5 Face with 2 black spots at mouth border; occiput largely black; thorax and abdomen with broad black longitudinal stripes ..... **vittatus** Bezzi
- Face and occiput without black spots; thorax and abdomen with black stripes very narrow or absent ..... **pallidus** Bezzi
- 6 Wings without a whitish apical spot and without distinct transverse dark bands; 2 inferior orbital bristles ..... **simplex** Bezzi
- Wings with a distinct whitish apical spot and more or less complete transverse dark bands; 3 inferior orbital bristles ..... 7
- 7 Subapical brown patch around apical whitish spot not reaching hind wing margin as a distinct band; mesonotum without a distinct medial whitish stripe; transverse bands parallel, the band through r-m cross-vein originating beyond stigma ..... **fasciolatus** (Loew)
- Subapical brown patch reaches hind wing margin as a distinct band; mesonotum with a

- distinct pale medial stripe; transverse bands not parallel, the band through r-m cross-vein originating at stigma ..... 8
- 8 Wings with transverse band from stigma and apical patch united in discal cell; femora black; abdomen black with a medial fulvous stripe ..... **inumbatus** (Munro)
- Wings with transverse band from stigma free from apical patch ..... 9
- 9 Arista plumose; ovipositor black; mesonotum with medial pale stripe indistinct; abdomen red-brown, black laterally ..... **major** (Bezzi)
- Arista short pubescent; ovipositor red-brown; mesonotum with medial pale stripe distinct ..... 10
- 10 Abdomen fulvous to red-brown, darker laterally ..... **hammersteini** (Enderlein)
- Abdomen black ..... 11
- 11 Prescutellar bristles present; oviscapae a little longer than tergites IV to VI ..... **pulchellus** (Bezzi)
- Prescutellar bristles absent; oviscapae as long as tergites V and VI ..... **pulchellinus** (Hering)

There is some confusion concerning the type-localities of *C. vittatus*. When Bezzi (1923) first recorded this species, from Gabon and Madagascar, he noted that it was being described elsewhere (Bezzi 1924a). Cogan and Munro (1980) regarded the name as available from this date and consequently listed the type-localities as Gabon and Madagascar. However, the notes on the species provided by Bezzi in 1923 are insufficient to recognize it, since they are equally applicable to most other species placed here in *Coelotrypes*. None of the criteria for availability under Article 12 of the International Code of Zoological Nomenclature (1985 edition) apply to the 1923 use of this name, which thus becomes a *nomen nudum*. The type-localities are therefore those given by Bezzi (1924a), Tsumeb in Namibia and Salisbury (now Harare) in Zimbabwe.

Munro (1953) differentiated subspecies *secata* Munro from *vittatus* by the thicker black stripes on the mesonotum, black basal portion of the abdomen, better developed subapical black wing patch and blacker antennae. A female from Bulawayo has the blacker abdomen and thick mesonotal stripes of *secata* and the weaker subapical patch and largely fulvous antennae of *vittatus*, suggesting that the differences are only varietal. Consequently, *C. vittatus secata* Munro, 1953 is regarded here as a new synonym of *C. vittatus* Bezzi, 1924. The prescutellar bristles are occasionally absent in this species.

Included species are: *fasciolatus* (Loew), comb. nov., *inumbatus* (Munro), comb. nov., *hammersteini* (Enderlein), comb. nov., *major* (Bezzi), comb. nov., *nigricornutus* Hering, *nigriventris* Bezzi, *pallidus* Bezzi, *pulchellus* (Bezzi), comb. nov. (incl. var. *deletus* Munro), *pulchellinus* (Hering), comb. nov., *ripleyi* Munro, *simplex* (Bezzi), comb. nov., *vittatus* Bezzi (incl. subsp. *setiger* Hering). *C. fasciolatus* is newly recorded from Namibia, whilst *C. major*, *C. pulchellus* and var. *deletus* are newly recorded from Zimbabwe.

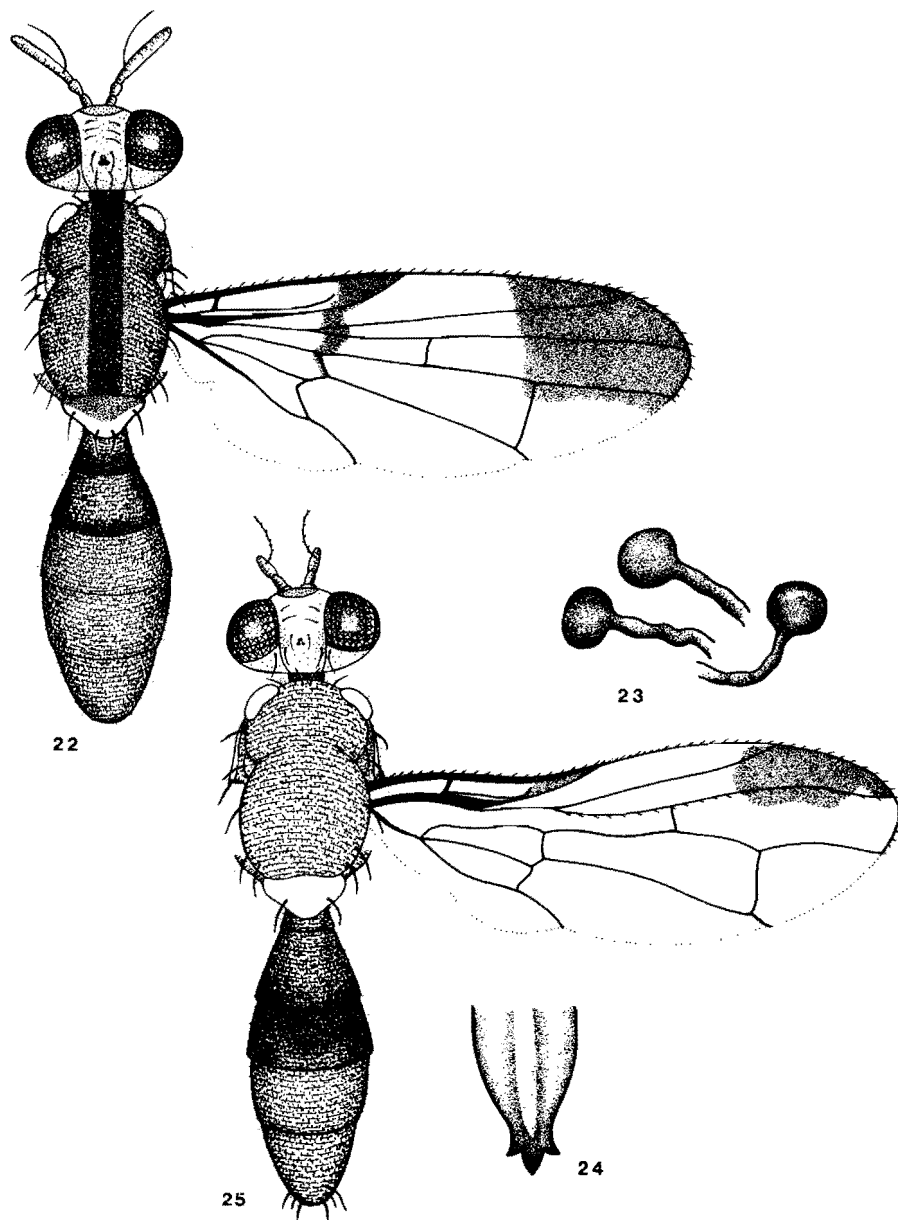
### Tribe Adramini

#### Genus *MERACANTHOMYIA* Hendel

A single species of this largely Oriental genus occurs in Africa. *M. antennata* (Hendel) is known from Ghana and possibly Angola.

#### Genus *MUNROMYIA* Bezzi

The sole species, *M. nudiseta* Bezzi (Fig. 22), is recorded from the Eastern Cape Province of South Africa. It breeds in the seeds of wild olives, *Linociera foveolata* (Oleaceae).



Figs 22–25. Adramini and Phytalmiini. 22. Adramini: *Munromyia nudiseta*, male. 23–25. Phytalmiini: *Sosiopsila metadacus*. 23. Spermathecae. 24. Tip of aculeus. 25. Male.

## Tribe Phytalmini

Genus *SOSIOPSILA* Bezzi

This genus was included in the Adramini by Bezzi (1924b), Cogan and Munro (1980) and Munro (1985) but it lacks pleurotergal hairs and has the anal cell of the wing blunt. These characters, combined with the sclerotized metathoracic postcoxal bridge, suggest an affinity with the Phytalmini. Munro (1985) accorded family rank to this tribe and regarded the shape of the spermathecae as somewhat diagnostic but they are variable within the tribe. In *Sosiopsila* they are rounded (Fig. 23), whilst the aculeus is trifid at its tip (Fig. 24). *S. metadacus* is figured here (Fig. 25).

No constant differences are detectable between specimens of *S. trisetosa* Bezzi from Zimbabwe and a syntype of *S. metadacus* (Speiser) from Zela, Cameroon (in National Collection of Insects, Pretoria). The size of the apical wing spot is a little variable. *S. trisetosa* Bezzi, 1920 is therefore placed as a new synonym of *Polystodes metadacus* Speiser, 1915. It should be noted that Bezzi apparently overlooked Speiser's *metadacus* when describing *trisetosa*, no doubt because the former was described as a species of Ortalidae (Speiser 1915). The biology of this genus is unknown but a female of *S. metadacus* was collected near Umvukwes (now Mvurwi) in Zimbabwe under leaves of *Bequaertiodendron magalismontanum* (Sapotaceae).

Two species are known. *S. metadacus* (Speiser) is known from Cameroon, Malawi, Zimbabwe, Moçambique and South Africa (E. Transvaal), whilst *S. rotunda* Munro occurs in South Africa (Transvaal and Natal). Known localities for *S. metadacus* in Zimbabwe are Impinge Pass near Mvurwi, Bindura and the Vumba.

## ACKNOWLEDGEMENTS

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